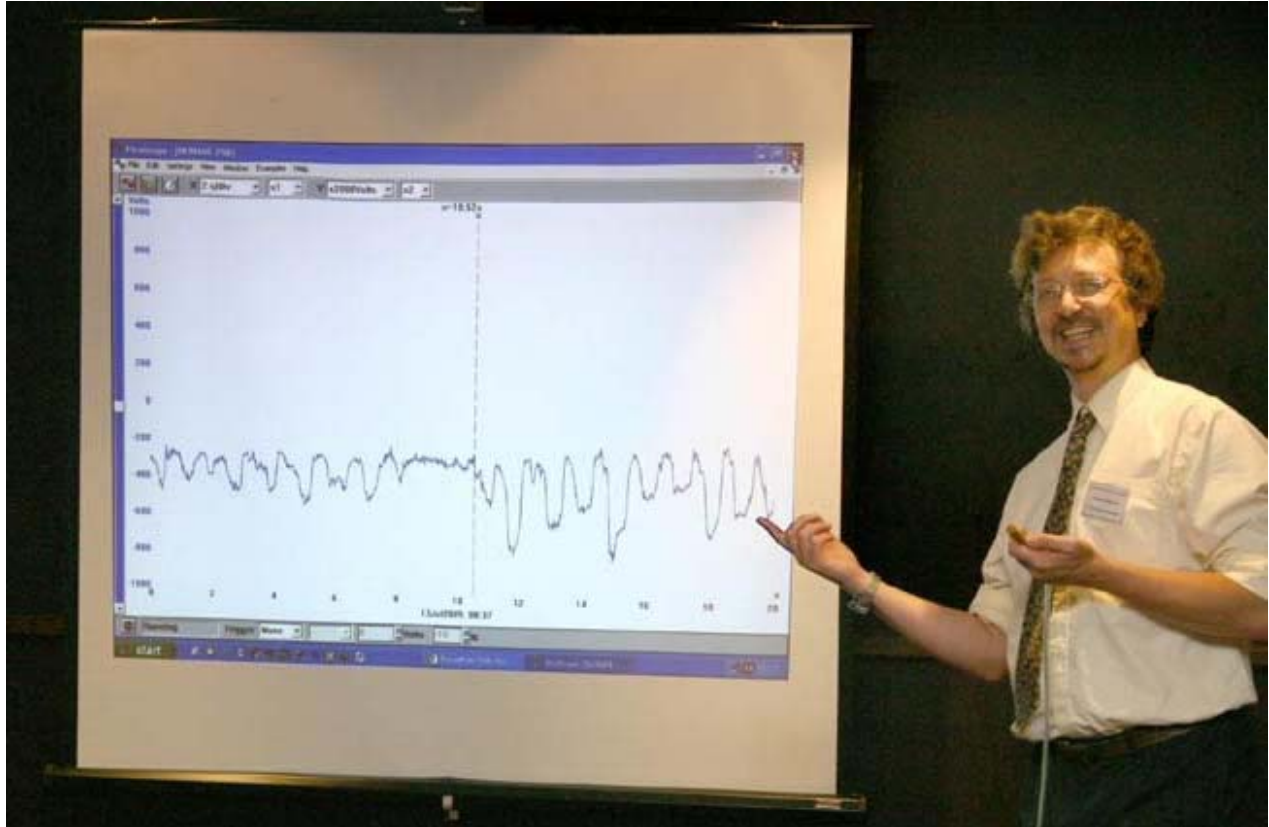


Electrostatic Solutions Ltd.

www.electrostatics.net



The reality of ESD

Dr Jeremy Smallwood

- Real static demonstrations
- Why do we need ESD prevention?
- Grounding people
- Your role in ESD prevention

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What is the course like?

Practical demonstrations show the reality of static and ESD and give a clear understanding of why grounding people forms the key ESD prevention measure. Presentations give basic knowledge and understanding of ESD damage, and the role of the individual in ESD prevention.

The 2 hour programme is designed to be suitable for a wide range of delegate job function and technical level. In-depth technical material is kept limited and brief. More depth, if required, may be given in response to questions.

The course covers the requirements of EN 61340-5-1 Level 2 ESD awareness training in a very stimulating and enjoyable format.

These presentations may be customised for your particular needs. To discuss your requirements, please contact Dr. Jeremy Smallwood.



Dr Smallwood uses electrostatic instruments to reveal static on everyday objects and people.



Finding the static voltage on your body can be quite surprising!

What will we learn?

Delegates will gain a practical awareness of static electricity and how it is in action in everyday life. The demonstrations give a keen sense of the reality of ESD. Delegates will learn:

- The reality of static and ESD
- Why ESD damage occurs
- A basic understanding of ESD
- Why personal grounding is the primary ESD prevention measure in manual handling and assembly
- How their individual role is important in ESD prevention

Who should attend this course?

Anyone needing an understanding of ESD in electronics manufacture, including

- Assembly personnel
- Goods Inwards personnel
- Supervisors
- Managers
- Designers
- Purchasing & procurement
- Cleaners and maintenance staff

Course content

Practical demonstrations using everyday objects and materials - and People!

Electrostatic instrumentation allows us to "see" the electrostatic charges which build up in everyday activities and can cause damage to sensitive devices.

Power point presentation covering basic ESD damage and sensitivity knowledge and understanding.

Real static (Demonstrations, 40 mins)

- Static is real and around us everywhere
- Charging by contact
 - ⇒ What materials can generate charge?
 - ⇒ Why don't we always notice static build-up?
- Static dissipation
- Removing charge by grounding
 - ⇒ Grounding people
- Charging by induction

Why do we need ESD prevention? (Power point presentation, 30 mins)

- What is ESD damage?
- Failure rates and cost of ESD damage (basic)
- Understanding ESD sensitivity (basic)
- ESD damage in manual assembly - the problem
- Typical device ESD sensitivity in the real world

Grounding people - the key ESD prevention measure (demonstrations, 30 mins)

- What is your body voltage?
 - ⇒ People charge during everyday activities
 - ⇒ Walking
 - ⇒ Seated, and rising from seat
 - ⇒ Removing clothing
- Grounding prevents body voltage build-up
 - ⇒ The importance of grounding people
 - ⇒ Wrist straps
 - ⇒ Footwear & floor
 - ⇒ Resistance to ground
- Touch grounding doesn't work

Your role in ESD prevention (PP presentation and discussion, 20 minutes)

- Personnel play a vital role in ESD prevention
 - ⇒ Daily checks and vigilance
 - ⇒ Personnel grounding - Wrist straps & Footwear
 - ⇒ Equipment and tools in the EPA
 - ⇒ "housekeeping" in the working area

Questions and discussion (10 mins)

Course Trainer

Dr Jeremy Smallwood MIEE MinstP CEng CPhys

Dr Jeremy Smallwood is an independent Consultant specialising in electrostatic discharge (ESD) research, and consultancy and ESD training,

Jeremy combines simple down-to-earth demonstrations with top level understanding of ESD issues, to provide interesting and effective training presentations. The demonstrations bring alive the reality of electrostatic charging and how this can lead to ESD damage, as well as demonstrating the effectiveness of ESD prevention measures.

Jeremy's in-depth knowledge allows him to clearly identify and explain key points during basic training, while taking the subject to much greater depth in specialist training courses. In recent years he has been closely involved in developing the British Electrostatic Control Association (BECA) Seminar programme.

Jeremy spent 7 years in industrial electronics R&D before joining the University of Southampton as a contract Research Fellow in electrostatic discharge studies. He subsequently led the Electrostatics Section at ERA Technology Ltd until March 1998, covering a wide range of electrostatic projects, training and consultancy work. In March 1998 he set up Electrostatic Solutions Ltd to give independent expert electrostatics related R&D, training and consultancy services.

He is an expert member of the British Standards national committee on electrostatic damage prevention and is Chairman of IEC TC101 Electrostatics, which drafted the new BS EN 61340-5-1 & 61340-5-2 ESD standards.

